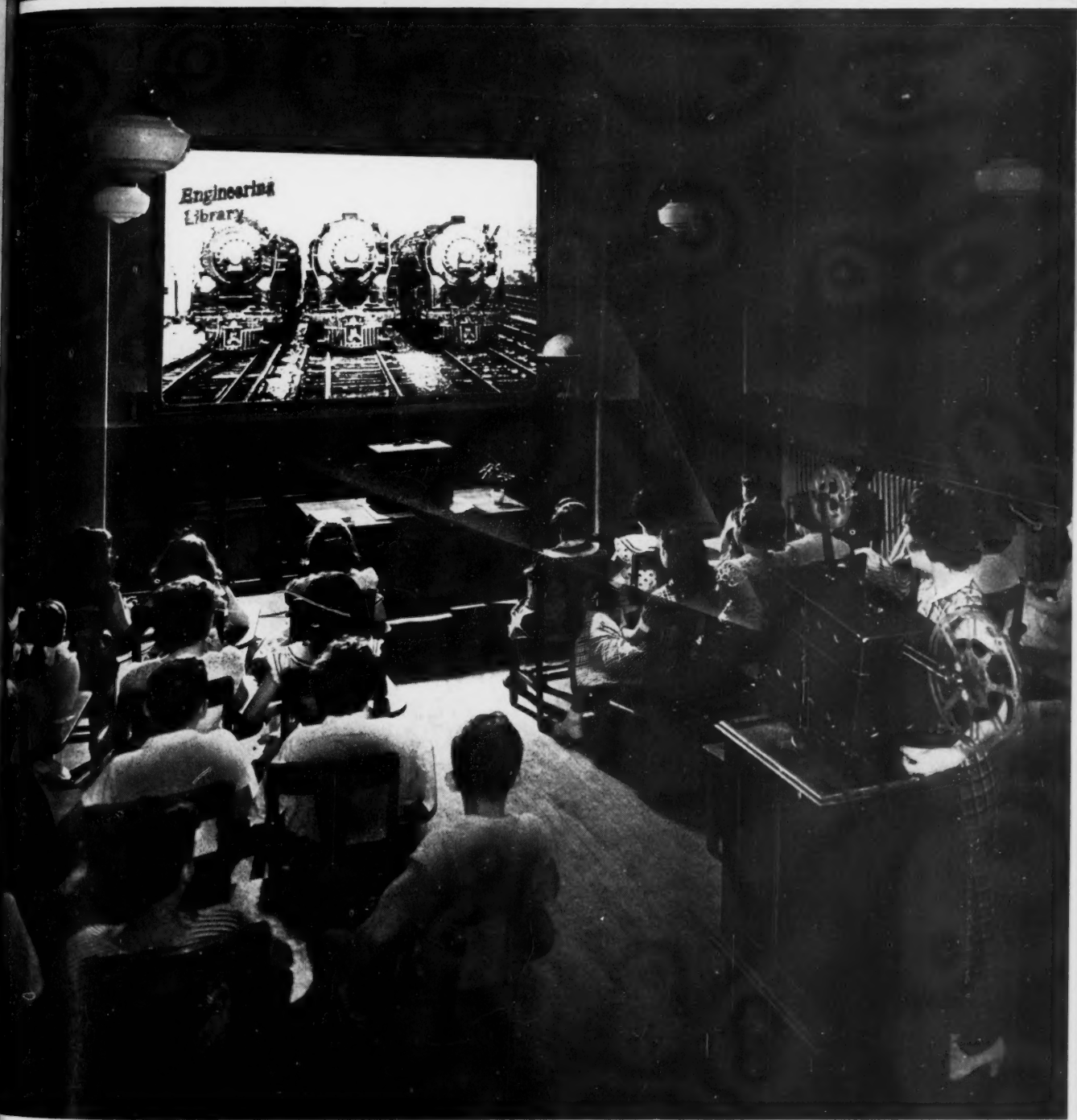
Industrial Standardization

and Commercial Standards Monthly



October

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1936

This Issue: ***Front Cover—Courtesy, Erpi Picture Consultants.***

The development of transportation is graphically portrayed in the classroom by means of 16-mm sound-film pictures.

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ASA

AMERICAN STANDARDS ASSOCIATION

ASA MEMBER-BODIES

Am. Gas Association
Am. Home Economics Assn.
Am. Institute of Bolt, Nut & Rivet Mfrs.
Am. Institute of Elec. Engineers
Am. Iron & Steel Institute
Am. Petroleum Institute
Am. Soc. of Civil Engineers
Am. Soc. of Mechanical Engineers
Am. Soc. for Testing Materials
Am. Transit Association
Assn. of American Railroads
Assn. of Am. Steel Manufacturers Technical Committees
Assn. of Gas Appliance & Equipment Mfrs.
Cast Iron Pipe Research Assn.
Electric Light and Power Group:
Assn. of Edison Illuminating Companies
Edison Electric Institute
Federal Housing Administration
Fire Protection Group:
Associated Factory Mutual Fire Insurance Companies
Nat. Bd. of Fire Underwriters
Nat. Fire Protection Assn.
Underwriters' Laboratories
Institute of Radio Engineers
Light Metals Group:
Aluminum Company of America
Mfrs. Standardization Soc. of the Valve and Fittings Industry
Nat. Assn. of Master Plumbers
Nat. Assn. of Mutual Casualty Companies
Nat. Bureau of Casualty and Surety Underwriters
Nat. Electrical Mfrs. Assn.
Nat. Machine Tool Builders' Assn.
Nat. Safety Council
The Panama Canal
Soc. of Automotive Engineers
Telephone Group:
Bell Telephone System
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OCTOBER 1936

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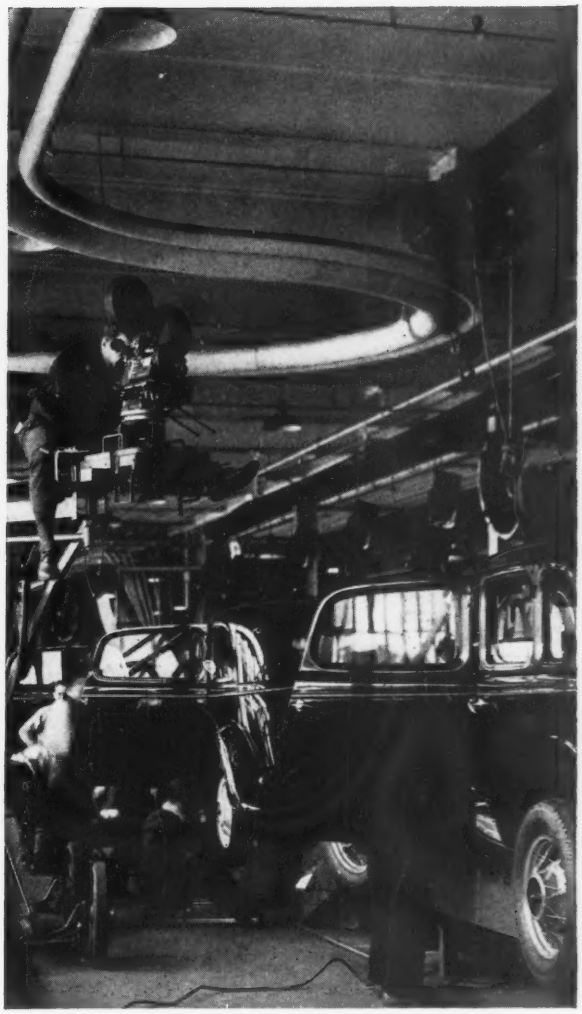
A World Standard *for* 16-Millimeter Sound-Film

September meeting of the International Standards Association ends in unanimous approval of the American Standard

by

S. K. Wolf[1]

President-elect,
Society of Motion Picture Engineers



Courtesy Erpi Picture Consultants

16-mm sound-films have many uses in industry. Here, the automobile assembly line is having its picture taken.

THE Budapest meetings of the committee on photography[2] of the International Standards Association have ended in complete international agreement on American Standard practice for 16-mm sound film—a result that a year ago seemed impossible. I have just returned from these meetings. The agreement reached through them will end a two-year controversy between motion picture industries here and abroad, and has wide cultural as well as economic significance. The standard set up will be international in scope, assuring complete interchangeability of 16-millimeter sound-film and equipment the world over.

This equipment, used by educational and industrial organizations, is growing in importance as a medium for school-room teaching, for training employees, sales promotion, sales instruction, and for direct sales, for making time studies, and for

[1]Erpi Picture Consultants; American representative at ISA Budapest meeting.

[2]Committee 36 on Photography and Cinematography.

Time and motion studies are made more accurate with the help of 16-mm film.

Courtesy Society of Motion Picture Engineers

a host of other eductional, technical, and commercial processes.

The unparalleled growth of the 16-mm sound-film industry, which within the space of only a decade has risen to an industry with a capital investment of some millions, and which rocketed from a comparatively small industry to its present position within the past two years, makes the international decision of special importance.

Extends Use in Education

In the education field, for instance, some delays in buying sound-film equipment have resulted from indecision as to which apparatus to buy when both the German and American types of projectors were on the market. Now that the situation has been settled, educators are in a position to make wide use of 16-mm motion pictures, both foreign and domestic, as an additional educational tool. Sixteen-millimeter films from abroad will include scenic and historic pictures, and other similar cultural and educational subjects. Likewise, American manufacturers of film will now be able to extend their activities to European and other countries.

Nearly everyone knows that it has not been possible to use American and German sound-film of the 16-millimeter size interchangeably unless special provisions were made in designing the projector. Although, from a superficial examination, the films look alike, in the German film the sound track lies to the right, with respect to the position of the emulsion, as viewed from the light-source, which is the reverse of American practice. Through the efforts of the International Standards Association and the national standardizing bodies of 20 countries, world practice will now be standard for these films.

The American 16-mm sound-film standards were developed and first published by the Society of Motion Picture Engineers in 1932. At that time there seemed to be a desire on the part of Germany and the rest of Europe to adopt the American standard, as had already been done in the case of 35-millimeter film. This intention was apparently carried out when the German standards were published by the Deutscher Normenausschuss in 1933. They seemed to be identical in all respects to the American proposal. American engineers, being unfamiliar with the German language, failed to note that a misinterpretation of the SMPE drawings on the part of the Germans had led to their being reversed. It was just as though Germany had adopted a right-hand glove and America a left-hand one. The sound-track in the two different drawings came on opposite sides, and American titles or printed matter, when run through a German projector, appeared as mirror images. These differences were discovered during the International Motion Picture Exposition at Paris, but unfortunately they were allowed to stand until commercial investments in equipment and film in both Europe and America had increased considerably.

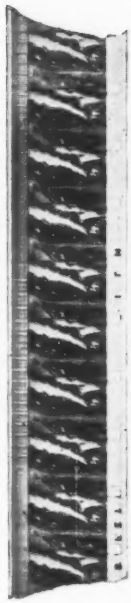
The existence of two conflicting standards seriously hampered international business. Both sides recognized that unless a single set of specifications were adopted, everyone in the industry stood to lose. A series of conferences followed at Rome and Baden-Baden which did away with a number

of other dimensional proposals for narrow-gage sound-film at variance with both the German and the American standards, such as the 17.5-mm width. Another conference, at Stresa, Italy, under the sponsorship of the International Cinematographic Institute, approved the German specifications, and at the Reichsfilmkammer at Berlin the action taken at Stresa was ratified.

This was the situation when, in 1934, the Society of Motion Picture Engineers, through Dr. Alfred N. Goldsmith, then its president, asked the American Standards Association to organize a sectional committee on dimensional standards for 16-millimeter motion picture film and equipment; and to bring the problem formally to the attention of the International Standards Association, of which the ASA is a member.

That the International Standards Association has in fifteen months been able to gain world unanimity on such a vital and complex problem is a triumph for the orderly and logical methods of international procedure.

So much money had already been invested in the 16-millimeter sound-film industry that whatever the decision, economic losses were bound to be involved. In England and France, both systems were in use. Several smaller countries were awaiting the outcome of the controversy before adopting any standard for 16-millimeter film.



The sound-track on this American Standard 16-mm positive sound-film is to the left when the emulsion side of the film is down. The sprocket holes which hold the film in position are at the right.

This illustration shows the actual size of a small section of film.

The whole matter was reopened at a joint session of the International Standards Association and the International Congress of Photography at Paris, July, 1935. Arrangements were made for a referendum of the 20 national standardizing bodies composing the membership of the ISA, as to which standard they preferred, their technical reasons for the preference, and the amount of commercial investment involved.

At first, practically no conclusions could be drawn except that an equal number of countries were already using each of the standards. In Austria and France opinion was divided. Czechoslovakia, Sweden, Italy, and Poland were uncertain. Various of the other countries expressed their willingness to adopt whichever standard gained the majority approval. In England, opinion on the two standards was so evenly divided that the British Standards Institution finally appointed Lord Riverdale (formerly Sir Arthur Balfour) as arbitrator, to conduct hearings and render a decision that would be most favorable to the interests of the Empire.

British Arbitrate

Last March the British Standards Institution made public the results of the arbitration which aligned England and all other great English-speaking peoples on the side of the American standard, and led the way to final agreement at Budapest.

In spite of the failure and even discord which

Other Standards Decisions Taken at Budapest Meeting

Other actions taken at the Budapest meeting of the International Standards Association were of importance to the motion picture industry, although perhaps not of such outstanding significance as the 16-mm film agreement.

Suggestions to bring some minor dimensional differences in the standards on 35-mm films into agreement were referred to the national standardizing bodies of the various countries. These suggestions will be considered by the standardization organizations and a conference to discuss the possibility of international agreement may be held in June, 1937, at Paris.

A resolution proposing a change in the scope of the International Standards Association's committee on Photography and Cinematography was passed. The proposal would limit the project, which originally included both photography and cinematography, to cover cinematography only.

attended early efforts to settle this question, the Budapest decision was arrived at unanimously.

The importance of this decision cannot be overestimated. It sets up a world standard for 16-millimeter sound-film. But more than that it proves the value of the International Standards Association and its importance in world standardization. Through free discussion and simple interchange of technical data, the International Standards Association has in less than two years gained unanimity on a question for which at one time there seemed to be no solution. The Association will undoubtedly continue to mean much to the motion picture industry, particularly, because of its broad activities throughout the world.

A great deal of credit must be given to the Germans for the step they have taken in making this decision possible. Such a step is expensive. Considerable investments in 16-mm equipment, built according to the original DIN specifications, have accumulated during the past few years, and it will be necessary to revise existing equipment and film to conform to the new standards, at least for foreign markets. Deutscher Normenausschuss is to be highly complimented on its willingness to reverse its stand and thereby make possible a single world standard.

Credit should also be given to Mr. A. Huber-Ruf, secretary of the International Standards Association, for the admirable way in which he helped to bring this problem to a conclusion, and to the 20 member-bodies of the International Standards Association for their willingness to supply all information and data necessary to further the various discussions and conferences.

ASA Represents American Opinion in International Conferences

Releasing users and manufacturers from the uncertainties of two different types of sound-film and sound-film equipment, the international agreement on a world standard gives increased impetus to the already thriving 16-mm sound film industry. The certainty that any films produced can be used interchangeably on any apparatus opens a world-wide market for educational and industrial films which may have a marked influence on the cultural development of the world.

This was brought about through the orderly cooperative procedure characteristic of the American Standards Association and the International Standards Association.

Through the Sectional Committee on Motion Pictures, sponsored by the Society of Motion Picture Engineers, all the trade and technical societies, motion picture producers, manufacturers of equipment, and general interest groups such as Federal government departments, concerned with the technical development of motion pictures in the United States had a voice in making the agreement. The views of American industry, expressed through the sectional committee, were presented at the international meetings by official delegates of the American Standards Association, appointed by the Society of Motion Picture Engineers, sponsor for the motion picture project.

Officers of the sectional committee are Dr. Alfred N. Goldsmith, chairman, and Sylvan Harris, secretary.

Federal Specifications Approved For Government Purchasing

New, revised, and amended Federal Specifications, for use in all Government purchasing have been approved by the Director of Procurement and are now available:

Bases, Metal; (for) Plaster and Stucco Construction QQ-B-101b
Cable and wire; rubber-insulated, building-type superaging-grade (0 to 5,000-volt service) J-C-106 Amendment 2
Floor-Covering; Rubber, Sheet ZZ-F-461
Gasoline; Motor, United States Government VV-G-101a
Inkstands, automatic and plain; and desk-sets DD-I-546 Amendment 1
Lamps; Electric, Incandescent, Large, Tungsten-Filament W-L-101b Amendment 1
Lamps; Electric, Incandescent, Miniature, Tungsten-Filament W-L-111a Amendment 1
Motor Fuel V VV-M-571a
Napkins; table, paper UU-N-106 Amendment 1
Paint; Titanium-Zinc and Titanium-Zinc-Lead, Outside, Ready-Mixed, White TT-P-101a
Paints; oil, interior, eggshell-flat-finish, ready mixed and semi-paste, light-tints and white TT-P-51 Amendment 2

Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents.

Haziness and Scratch Resistance Affect Use of Transparent Plastics

Manufacturers May Cooperate to Establish Standard Test Methods

An investigation of test methods for plastics in order to establish standard specimens and test procedures may be undertaken by the National Bureau of Standards in collaboration with plastics manufacturers, who have indicated their desire to cooperate, according to the *Technical News Bulletin*, October. A survey of the data on the properties of synthetic and natural resinous compositions, cellulose derivatives, and protein plastics indicates that it is difficult to correlate the values for the different materials because of nonuniformity in the methods of testing.

The haziness and scratch resistance of transparent plastics are of prime importance in connection with their use as windshields on aircraft. In a study of these materials now under way at the National Bureau of Standards, in cooperation with the National Advisory Committee for Aeronautics, special methods have been developed for the measurement of these properties. G. M. Kline and B. M. Axilrod described these methods in a paper presented as part of a symposium on synthetic resins and plastics at the Pittsburgh meeting of the American Chemical Society, September 10.

Because of the difficulty of applying previous methods for the determination of haziness, government specifications for plastics have not included quantitative limits for it. The instrument developed in the recent National Bureau of Standards' investigation now permits a rapid and reliable measure of this property as well as of light transmission.

1937 to See Second International Congress on Testing Materials

The second International Congress of the International Association for Testing Materials will be held in London April 19 to 24, 1937. International cooperation in the study of materials and their testing, and exchange of views, experience, and knowledge with regard to all phases of the subject, are the purpose of the congress.

The last international review of the study and testing of materials took place in September, 1931, at Zurich.

Approximately 150 papers have been promised for the 1937 congress by leading authorities in their respective fields in the principal countries throughout the world.

The congress will be open to all interested in the study of materials and their testing, on payment of the membership fee.

The subjects selected for discussion are divided into four groups—metals, inorganic materials, organic materials, and subjects of general importance.

W. H. Fulweiler, vice-president of the International Association for Testing Materials, and American representative on its Permanent Committee, is in charge of American participation in the congress. Correspondence on this subject should be addressed to him, care of the American Society for Testing Materials, 260 South Broad Street, Philadelphia.

Canadian Standards Association Issues New Specifications

The Canadian Engineering Standards Association has issued the following specifications during the past few months:

Enclosures for use in hazardous locations C22.2 No. 25-1936
Enclosed branch-circuit cutouts C22.2 No. 30-1936
Electrically operated refrigerating machines C22.2 No. 32-1936
Electric cranes and hoists C22.2 No. 33-1936
Electrode receptacles for luminous-tube signs C22.2 No. 34-1936
Electrical apparatus for hair-dressing and hand-drying C22.2 No. 36-1936
Rubber-covered wires and cables C22.2 No. 38-1936

Copies of these specifications may be obtained from the C.E.S.A. Secretary, Room 3064, National Research Building, Ottawa, Ontario, at 25 cents each.

Tests of gasoline performance are made under actual use conditions to check octane-ratings determined by standard laboratory tests in the CFR engine.

Courtesy Society of Automotive Engineers

Gasoline Specifications—

Temperature, Climate, Nature of Product Prevent Easy Solution of Standards Problems

by

R. E. Hess[1]

Secretary, Sectional Committee on Petroleum Products and Lubricants

COMMITTEE D-2 on Petroleum Products and Lubricants of the American Society for Testing Materials has recognized for some time the need for generally acceptable purchase specifications for gasoline, and its Technical Committee A on Gasoline is making progress in the development of these specifications. This need was originally made evident by state and municipal agencies[2] that are required by law to purchase on specification and by large fleet owners who desire to contract for their supplies.

Recently the American Standards Association's Sectional Committee on Petroleum Products and Lubricants requested Committee D-2 to broaden the scope of its program to include specifications for gasoline for heavy-duty trucks and busses as desired by the American Transit Association. It is not the purpose here to forecast what the details of the specifications will be, but rather to point out some of the factors that must be considered to protect the interests of the consumer, particularly with respect to distribution, cost, and performance.

Distribution. From the very nature of its use, gasoline must be available everywhere and

[1]Assistant Secretary, American Society for Testing Materials.

[2]This refers only to gasoline for use in government-owned equipment. The question of legal standards for gasoline in states is naturally an entirely different problem, outside the scope of the present discussion.

at almost any time. In this respect gasoline and motor oil are unique among purchased materials. Because most vehicles take delivery from service-station pumps all the time and all vehicles do so some of the time, it is not practical for each consumer to segregate his own supply made to his individual specification. Neither can he conveniently always refuel at the same service station. Accordingly there must be waiting for him at all or nearly all stations that particular gasoline which meets the requirements of his motor.

Cost. Any increase in the number of grades of gasoline handled by one service station means an increased cost for tanks and pumps, for maintenance, and in lesser degree for manufacturing expense. This increased cost must ultimately be absorbed by the consumer of the gasoline. Obviously, therefore, for any given place and time the number of grades of gasoline should be kept at a minimum.

Performance. Satisfactory operation of a vehicle depends both upon the design of its power plant and on the nature of the gasoline.

Freedom from knocking under ordinary conditions of operation is an important requisite of present-day gasoline. This is measured by the

Courtesy Waukesha Motor Company

The CFR Engine — By means of which standard laboratory tests of octane-rating of gasoline are made. Results of laboratory tests are checked with results of road tests.

Editor's Note: **By request, Mr. R. E. Hess, assistant secretary of the American Society for Testing Materials and secretary of ASA Sectional Committee on Petroleum Products and Lubricants (Z11), has contributed this timely article on gasoline specifications.**

Recently the American Transit Association requested the American Standards Association to undertake the preparation of purchase specifications for gasoline for trucks and busses, and this request was referred by the ASA to the newly reorganized Sectional Committee Z11.

The article in *Industrial Standardization* for June, 1936, was based upon the information contained in the ATA request and should not be considered as editorial in nature.

octane number[3] of the fuel. The compression ratio of the engine and the combustion chamber design determine the octane-number requirement of the gasoline when the engine is new. Carbon deposition in the combustion chamber during service may increase the octane-number requirement of the gasoline if knocking is to be avoided. In order to provide for the varying requirements of automotive equipment two grades of gasoline are usually marketed (premium and regular) which differ in octane number. In some localities a third-grade gasoline is sold which is ordinarily lower in octane number than the regular grade. Examination of analyses of gasoline samples collected throughout the country show a reasonable degree of uniformity in octane number of the regular and premium grades.

For instance, U. S. Bureau of Mines Report of Investigation 3311 shows that 90% of 473 samples had octane numbers within the following limits:

Range of Octane Nos.	*Regular* 68-71	*Premium* 74-61	*3rd Grade* 50-66

A second important property of gasoline is its volatility, the volatility requirement being determined by the fuel system of the power plant and by climatic conditions. If too much heat from the engine finds its way into the fuel system, the fuel may become overheated and may vaporize before entering the carburetor, with the result that vapor lock occurs. Decreasing the volatility of the fuel minimizes this trouble. On the other hand, decreasing the volatility makes starting more difficult. Therefore, for satisfactory operating conditions, it is necessary to control both the fuel-system temperatures and the volatility of the fuel in order to obtain satisfactory starting and freedom from vapor lock. It is customary to adjust the volatility to the season and to the geographic location in order to obtain best results.

The extent to which volatility is varied to meet climatic conditions is shown in the following table, which has also been taken from the Bureau of Mines Report.

Table A

	Average Vapor Pressure Lb per sq in.	*Average 10 per cent distilled temperature*
Houston	6.8	142
Los Angeles	—	138
St. Louis	10.7	125
Chicago	11.5	119
Minneapolis	10.9	117

[3]The octane number of a gasoline is the percentage of iso-octane in a mixture of iso-octane and normal heptane which will match the gasoline in knock characteristics when compared in a special test engine by carefully standardized procedure. See A.S.T.M. Tentative Method of Test for Knock Characteristics of Motor Fuels (A.S. T.M. D357-36T; ASA Z11.37-1936).

Vapor pressure is the criterion used by most of the automotive and petroleum industries to indicate the tendency of a fuel to vapor lock. The ten per cent distilled temperatures indicate roughly the ease of starting a cold engine. The lower the figure the better the fuel in this respect. Examination of the figures clearly shows how the volatility is adjusted to suit the temperatures prevailing in each locality.

It is also important that the gum content of the gasoline be low enough to eliminate the possibility of sticking valves. In addition, the gasoline should be free from corrosive substances that might damage the fuel-induction system.

It will be obvious from these brief observations that the preparation of satisfactory specifications for gasoline for automotive equipment is a difficult task. This difficulty is accentuated by the wide range of temperatures that may be encountered in a single-day's operations of a vehicle, and by the fact that vehicles of all types and age must be serviced. However, progress has been made, and it is expected that the preliminary recommendations of Technical Committee A will soon be made available for trial.

Standardization Gives Order To Finnish Ship Builder

Standardization was credited recently by *Lloyd's List and Shipping Gazette* as having been an important factor in determining which of competing shipyards were to have an order for a new motor fruit ship. The ship is a 3,000 tonner ordered by Gustaf B. Thorden of Helsinki which will be constructed at the Crichton-Vulcan yard at Abo, Finland. The new ship is to be the largest vessel ever built in Finland.

The engines, according to *Lloyd's List*, are of completely standard type and are sold, therefore, at an attractive "standard" price.

"Furthermore, standardization makes for very early delivery and must have been a great adjunct to the price put forward by the Abo Yard," says the article in *Lloyd's List*, "which enabled the contract to be secured in competition with several foreign yards, particularly those in Sweden and Denmark.

"In the last few years the Atlas Company have concentrated almost entirely on standard units of under 1500 hp. These they are able to deliver with excellent servicing in a short time, and at a very satisfactory price. It is the first time, however, in which standard units of this power have been delivered to a special ship of fruit-carrying type."

Scientific Buying Is Goal Of Sears Roebuck Guide

HOME purchasing will reach a new scientific high when the Consumers' Shopping Guide of Sears, Roebuck and Company comes into general use as shopping information for homemakers.

The magnifying glass plays an important role in the Consumers' Shopping Guide method of purchasing. Samples of different types of materials in different qualities and weights are mounted on cards with definite information as to the characteristics which determine whether a piece of material, a bed blanket, or a cotton sheet is of a quality desired by the buyer.

"To aid in comparing quality, hold the card up to the light. To see variations in yarns and weaves, use the magnifying glass provided with the set," instructions on the card direct, and continue with information about distinguishing characteristics of the article or material under consideration, how quality can be determined and what to look for when buying.

A handbook of facts as a guide to better buying includes information about different materials, some simple tests to determine quality, and instructions for caring for different types of fabrics. One section includes definitions of standards and terms and an index.

Forty different types of fabrics are included in the Guide, from diaper cloth and baby flannel to window shade cloth, oilcloth, hosiery, blankets, and sheets.

Cards show samples of different grades of textiles. A magnifying glass for comparing the samples is furnished.

Cards are furnished on which records of purchases can be kept, with spaces for date, quality purchased, brand name or number, cost, where purchased, and remarks about results obtained.

For further information about the Consumers' Shopping Guide write to the Homemakers' Foundation, a Division of Sears, Roebuck and Company, Chicago, Ill.

South Africa Protects "Standard"; Forbids Use in Trade Marks

No trade mark containing the word "Standard" will be registered in South Africa, as the result of an agreement reached between the Registrar of Patents and the South African Standards Institution.

Originally it was agreed, with the approval of the Minister of Commerce and Industries, that the Registrar should prevent any organization from registering trade marks which were an infringement on the marks "South African Standard" or "S.A.S.I." and "British Empire Standard" or "B.E.S." Following a reported infringement of the trade mark of the British Standards Institution, "BeSa," the agreement was widened to prevent any use of the word "Standard."

During the past year, the South African Standards Institution issued a Standard Method of Analysis of Lime Soap—Mineral Oil Greases, and has been working on standards for washing soda, sampling coal in trucks and stacks and coal in seams, salt, and corundum.

Standards for Trolley Wire Submitted for ASA Approval

Specifications for Bronze Trolley Wire and for Copper Trolley Wire have been submitted by the American Society for Testing Materials for approval by the American Standards Association.

The specifications are those adopted by the A.S.T.M. as A.S.T.M. standards B 9 and B 47. They were prepared by the Joint Committee of the Association of American Railroads, the American Transit Engineering Association, and the A.S.T.M. Committee B-1 on Copper and Copper Alloy Wires for Electrical Conductors.

Suggest Excavations and Foundations As Next ASA Building Code Project

New Members Increase Nation-Wide Representation on Building Code Correlating Committee

FURTHER progress in the development of its program, and additional new members assuring country-wide consideration of building code problems, were reported by the Building Code Correlating Committee, following a meeting September 18.

Albert Kahn, consulting architect of Detroit, and a member of the former Building Code Committee of the U. S. Department of Commerce, and William H. Crowell, architect, of A. E. Doyle and Associates, Portland, Oregon, have accepted invitations to join the committee as members-at-large. At the request of the BCCC, the American Institute of Architects has named an additional representative, Mellen C. Greeley, architect, Jacksonville, Fla., with Theodore I. Coe, architect, Washington, D. C., as alternate. With the addition of these members, country-wide consideration of problems in the building code field is assured.

As the next step in the building code program, it was recommended that the American Standards Association authorize work on building code requirements for excavations and foundations. The American Society of Civil Engineers agreed to accept sponsorship of this project in the event that the work is authorized by the ASA Standards Council. This project is one of several that have been under consideration by the Building Code Correlating Committee for some time. Definite action on the others has been deferred for further study.

Projects on building code requirements already authorized by the ASA are:

Fire Protection and Fire Resistance (A51)
Chimneys and Heating Appliances (A52)
Light and Ventilation (A53)
Fire-Extinguishing Equipment (A54)

To develop proper working stresses for building materials, the Building Code Correlating Committee plans to organize an advisory committee. The personnel of this advisory committee would include engineers of national reputation and wide experience with building materials and building construction. It is hoped through this committee to obtain a consensus of the best professional opinion as to proper working stresses consistent with public safety and economy.

Data from tests on full-size samples of construction in masonry, steel, and other building materials are now being summarized and tabulated. This information, together with data on working stresses assembled by the former Building Code Committee of the Department of Commerce, will be available to the new committee.

Standard Coal Sizes Would Help Business, Says British Journal

Standardization of names for coal sizes would help the coal business, according to *Coal Merchant*, London, March 21, which suggests a national conference of British colliery representatives to draw up an agreement for standardization of coal sizes.

"It would facilitate business if a uniform description was decided upon, so that foreign and home buyers would not only know that a particular name had the same meaning in all coal fields, but that it related to a coal of a uniform size," says the *Coal Merchant*.

In one coal field in Great Britain, at present, more than 100 different grade sizes are produced, whereas on the Continent eight sizes have been standardized and found satisfactory. The same sizes of coal are known by different names in Scotland, Wales, and other districts, although a request by French consumers resulted in standardization of sizes by Welsh exporters and collieries a few years ago.

Revised Simplified Practice Recommendation On Hack-Saw Blades Effective

A revision of Simplified Practice Recommendation R90, Hack-Saw Blades, has been accepted by producers, distributors, and users, and is effective as of October 1, the Division of Simplified Practice, National Bureau of Standards, announces.

Standards Protect Users Of Ultra-Violet Light

THE United States was represented at the meeting of the International Committee on Measurement and Standardization of Ultraviolet Radiation for Use in Medicine at Wiesbaden, Germany, in August. Dr. W. W. Coblentz, representing the National Bureau of Standards, was a member of the United States committee.

Dr. Coblenz presented a paper on "Physical Methods of Lightdosimetry" and told of the activities of the Council on Physical Therapy of the American Medical Association, in cooperation with the National Bureau of Standards, in promulgating requirements for intensities of ultraviolet lamps acceptable for therapeutic purposes.

Dr. Coblentz said that the work of the Council is in keeping, in general, with the recommendations of the International Committee on Measurement and Standardization of Ultraviolet Used in Medicine.

Physicians Request Standard

The standardization program of the American Medical Association's Council was begun as the result of specific requests from physicians for a simple means of determining whether a lamp emits an appreciable amount of ultra-violet radiation. As a result it was decided to use the erythemal reaction as a criterion for judging the effectiveness of an ultraviolet lamp, because

(*a*). It is in common use as an indicator of skin tolerance to ultraviolet radition;

(*b*). The correlation of the physiologic (erythemal) reaction to ultraviolet radiation with the radiometric evaluation of the stimulus is established with sufficient accuracy to permit a calculation of the approximate time of exposure, based upon a simple measurement of the ultraviolet radiant flux emitted by the lamp;

(*c*). It is a simple and practicable means of preventing severe burns when using powerful sources of ultraviolet radiation; and

(*d*). It is an efficient safeguard against the fraudulent sale of lamps that emit little or no radiation of wave lengths shorter than about 3132A, generally accepted as having a specific effect in preventing rickets.

International Committee Works on Measurement and Standardization of Ultra-Violet Radiation for Medicinal Use

The Council does not prescribe the dosage. Its function is to keep the medical profession and the laity advised on the properties of the numerous devices offered for use in physical therapy.

When the specification was written five years ago, the Council was aware that the erythematogenic property of the lamp is not necessarily a measure of its healing power. "However," says the *Technical News Bulletin*, September, in reporting Dr. Coblentz' address, "with the widespread advertising of lamps for healing purposes, some so weak in ultraviolet radiation that 20 hours, or longer, would be required to produce a mild (if any) erythema, some action had to be taken."

The Council, therefore, specified the minimum ultraviolet radiant flux that a lamp must emit in order to qualify as a therapeutic agent. This is based upon the correlation of the erythematogenic action and the radiometric evalution (in absolute units) of the intense and easily isolated emission line of the mercury arc of wave length 2967A, which is used as a standard.

The Council has adopted 20 microwatts per square centimeter of homogeneous radiation of wave lengths 2967A as the unit of erythemal flux, (E.U.). On the basis of the Council's specification of an exposure of fifteen minutes, it will require a flux density of 20 microwatts per cm^2 (1 E.U.) of homogeneous radiation of wave length 2967A to produce a minimum perceptible erythema.

After the ultraviolet spectral energy distribution of a given type of lamp is known, it is a simple matter to measure by means of a differential thermopile and barium flint glass filter (as recommended by the International Committee at Copenhagen in 1932) the total flux of wave lengths shorter than and including 3132A, emitted by a particular lamp, and thus determine whether it is acceptable.

The Council's requirements for acceptance of ultraviolet lamps have been in use for about five years. In the one or two instances where there have been disagreements in the evaluation of the ultraviolet intensity of a lamp, the manufacturer has accepted the findings of the National Bureau of Standards in preference to his own.

Fabric Tests Show How Textiles Wear

Tests of dress fabrics definitely indicate how the textiles will wear, and form reliable guides in setting up standards for serviceability. This conclusion was reached as the result of a study undertaken by the American Home Economics Association with the cooperation of college students and teachers and the National Bureau of Standards.

During the study, started in 1930, the students purchased silk fabrics in the local stores, made dresses for themselves, and observed the performance of the dresses in service, all as a part of their class assignments.

Samples of the fabrics were analyzed and tested at the National Bureau of Standards when they were new. After the dresses had been used, 23 of them, showing the results of wear, were examined, with reports on their behavior in service.

Good correlation was found between the results of laboratory "performance" tests on color fastness, breaking strength, and aging characteristics of the fabrics, and the behavior of the dresses in service.

"These results point to the practicability of evaluating dress fabrics by performance tests and of setting up standards for serviceability on this basis," says the *Technical News Bulletin*, September. "Methods for determining these important properties were recently brought together in Commercial Standard CS59-36, Woven Dress Fabrics-Testing and Reporting, at present available in mimeographed form, and which will soon be obtainable as a printed publication."

Precise Method Measures Frequency Difference

A method of measuring with extreme precision the frequency difference between two standards which have nominally the same fundamental frequency is being applied at the National Bureau of Standards to the continous intercomparison of the piezo oscillators in the national primary standard of frequency.

The customary method of measuring the frequency difference between two piezo oscillators utilizes the beat frequency between the two standards at the fundamental frequency or one of the harmonics. The new method, which is described in the *Journal of Research* for October,[1] utilizes the frequency produced by heterodyning two consecutive harmonics to obtain any desired precision of comparison without necessitating the operation of any circuits at exceedingly high frequencies.

Report on Methods to Determine Oxygen in Ferrous Materials

International cooperative analysis of methods employed for the determination of oxides and oxygen in ferrous materials, under the joint sponsorship of the National Bureau of Standards and the Iron and Steel Division of the American Institute of Mining and Metallurgical Engineers, has resulted in reports on data obtained in 34 laboratories.

More than 2,000 analytical determinations made in these laboratories indicate, according to the October issue of the *Technical News Bulletin*, that the vacuum-fusion method yields accurate results for the oxygen content of plain carbon steels, either aluminum-killed, silicon-killed, or of the rimming type; the aqueous iodine method yields accurate results for some types of killed steels but low results for other steels. More data, and particularly more concordant data, are necessary to define the accuracy of the other methods employed in this cooperative analysis.

Color Code for Marking Steel Bars Proposed as Simplified Practice

A proposed Simplified Practice Recommendation for a Color Code for Marking Steel Bars has been mailed by the Division of Simplified Practice, National Bureau of Standards, to all interests for consideration and approval.

The proposal was originally submitted to the industry on August 27, 1935, but so many constructive suggestions were received that it was found advisable to revise the Color Code to insure more general acceptance.

Mimeographed copies may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

[1] National Bureau of Standards Research Paper 925.

A. S. T. M. Adds New Specifications To Published Tentative Standards

NEW specifications recommended recently by committees of the American Society for Testing Materials were approved for publication as tentative standards by A.S.T.M. Committee E-10 on Standards. This committee has the power to act for the Society in the intervals between annual meetings in approving new specifications for publication as tentative and in approving publication of revisions in existing standards.

Four of the new specifications, developed and approved by Committee A-1 on Steel, cover high-strength rivet steel, seamless steel boiler tubes and super-heater tubes for high-pressure service, alloy-steel bolting materials for high pressure at temperatures up to 1100 F, and nuts for bolts for high-pressure and high-temperature service to 1100 F. These are designated as A 195, A 192, A 193, and A 194, respectively.

In recommending the high-strength rivet steel specifications the committee is meeting persistent demands for an authoritative specification for this material to provide for the economical use of high-strength structural steel. The steel covered is suitable, with proper riveting technique, for use with Structural Silicon Steel (A.S.T.M. A 94) and equivalent steels.

More Rigorous Tests

The new specifications for seamless steel boiler tubes (A 192) provide for more rigorous and more numerous tests than in the existing A.S.T.M. Standard (A 83) covering lap-welded and seamless steel and lap-welded iron boiler tubes. The specifications are for boiler tubes and super heater tubes 2 in. in outside diameter or larger and heavier than .203 minimum wall thickness.

The specifications for steel nuts (A 194) cover five grades of nut material for services varying in degree of severity.

Alloy-steel bolting material specifications for high-pressure and high-temperature service to 1100 F (A 193) cover five classes of materials. The minimum tensile strength, after final heat treatment, for bolting materials 2½ in. in diameter and under, ranges from 95,000 lb per sq in. for Class A to 135,000 lb per sq in. for Class D. The steels are of the following types: nickel-chromium-molybdenum, 4-6 per cent chromium, chromium-molybdenum, tungsten-chromium-vanadium, and tungsten-chromium.

Requirements in the new specifications for malleable iron for castings made by the cupola process (A 197) provide for a minimum tensile strength of 40,000 lb per sq in., a yield point of 30,000 and minimum elongation in 2 in. of 5 per cent.

Standard definitions of terms relating to cast iron were approved as tentative (A 196). Previous definitions of Howe, Moldenke, and others were studied and voluminous correspondence with many metallurgists all over the country was carried on in preparing the definitions.

Revise Steel Analysis

Revised methods for chemical analysis of steel, cast iron, open-hearth iron and wrought iron (E30), based on the experience of the members of the A.S.T.M. Committee E-3 on Chemical Analysis of Metal, replace the former standard methods covering chemical analysis of plain carbon steel (A 33), analysis of alloy steels (A 55), methods of sampling rolled and forged steel products for check analysis (A 130) and sampling and chemical analysis of pig and cast iron (A 64).

New specifications for aluminum-base alloy permanent mold castings were approved (A.S.T.M. B 108-36T). These specifications cover practically the entire aluminum-alloy permanent mold field, and the committee in submitting the specifications indicated that they are representative of the present practice in the field. While the production of the type of castings covered has for some time exceeded many million dollars' worth each year, there has been no A.S.T.M. specification developed.

Add New Alloys

Extensive revisions of the existing specifications for Aluminum-Base Alloy Sand Castings (B 26) were approved. The changes provide the elimination of certain alloys which have become obsolete and the addition of several new alloys now in commercial production for which there has been a demand for specification requirements.

The former specifications provided for nine alloys, whereas the new specifications cover twelve.

Changes in the existing tentative standards on building brick made from clay or shale (C 62-35 T) and methods of testing brick (C 67-35 T) were approved. The revisions in the methods of testing brick (C 67) are based on a paper presented as part of the 1936 Report of Committee C-3 on "Water Absorption of Building Brick" by J. W. McBurney. This paper discussed work undertaken to determine the permissible variation in the methods of test for absorption from the standpoint of reproducibility of results.

New specifications for glazed building units cover brick, tile, and masonry units of clay or shale with a finish consisting of a vitreous glaze, excluding natural salt-glazed ware. Standard sizes of units are given and a chart of standard textures and colors of glazed units. Requirements cover imperviousness, opacity, and acid resistance of the finish, absorption of the body (by 24-hour submersion not to exceed 7 per cent) and resistance to crazing (Autoclave test).

Seek Standard Hitch For Tourist Trailers

With use of tourist trailers increasing daily, the Society of Automotive Engineers plans appointment of a committee to set up a suitable standard for the couplings by which the trailer is attached to the automobile. Trailers are likely to be drawn by any make of car and the time has arrived, prominent engineers say, when a standard coupling design which will permit interchangeability of the trailer from car to car might bring real economic benefits.

Interchangeability resulting from S.A.E. Standards—which now cover practically every part of an automobile or truck—is estimated to have saved car owners more than a billion dollars in the last 25 years. The Society has done important standardization work for the aircraft industry in recent years and current activity in the fast-growing tourist trailer field is in line with its practice of keeping S.A.E. standardization activities fully abreast of new needs as they arise.

Plan Standard Colors For Housefurnishings

A new committee to work for standardization of colors for housefurnishing merchandise displayed and sold in department and specialty stores has been appointed by the newly organized Housewares, China, and Glassware Buyers' Group of the Merchandising Division, National Retail Dry Goods Association.

At the meeting of the group which organized the color standardization committee, James Ginsberg of Hearns, New York, told of the need for standardization and coordination of colors in home furnishings departments. He said customers are confused and profitable sales are lost by the offering of housewares in a dozen or more shades of green for the kitchen, and eight or ten greens for a bathroom.

Revised Standard Limits Manganese in Iron Bars

Manganese in refined wrought-iron bars shall not exceed 0.15 per cent, according to the revised standard specifications[1] just approved by the American Standards Association.

Minor changes in wording and elimination of the word "wrought" in the title were also included in the revised standard.

The scope of the project on refined wrought iron bars was approved as follows:

These specifications cover wrought-iron bars generally considered satisfactory for the manufacture of nuts, bolts, braces, tie rods, and general purposes for services where the characteristic resistance of wrought iron to corrosion and fatigue stresses is indicated.

The American Society for Testing Materials is sponsor for this project.

Revised Test Method for Insulating Oils Proposed

A revision of the American Standard Methods of Testing Electrical Insulating Oils, adding by reference a new test procedure for specific gravity, was presented to the American Standards Association for approval by the American Society for Testing Materials. The test added is the A.S.T.M. Standard Method of Test for Gravity of Petroleum and Petroleum Products by Means of the Hydrometer (A.S.T.M. D 287-33; ASA Z11.31-1933).

The sectional committee in charge of the project on Electrical Insulating Materials is under the administrative supervision of the American Society for Testing Materials.

[1] ASA G12-1936; A.S.T.M. A41-36.

Simplification and Standardization Of Containers and Packages[1]

Fewer Losses Result From Government's Help on Export Packing; Standards Program for Domestic Packaging Follows

Shipping Containers, Packaging, Food Containers, Containers for Dry Goods and Specialty Stores Show Smaller Variety, Better Quality Under Program of National Bureau of Standards

by

W. E. Braithwaite

Division of Simplified Practice,
National Bureau of Standards,
U. S. Department of Commerce

THE problem of how to improve handling, transport, and distribution of commodities is a matter of primary importance to practically all the industries of the country. Since most manufactured products require some form of container, the best method of packing and packaging is recognized as one of the fundamentals of economical and efficient distribution. Two important aspects of the problem present themselves for solution. First, there is the specific requirement of securing the least expensive, and at the same time the best, type of container available for a specific purpose. There is also the problem of the best dimensions, shapes, and capacities, the most easily handled types of containers, the most satisfactory units from the consumer's point of view, to be considered. These are points which concern not only the industry but the carriers and all users of a particular commodity as well.

For a number of years the United States Department of Commerce has stressed the importance of adequate packing of merchandise for export and, through the Bureau of Foreign and Domestic Commerce, has endeavored to acquaint shippers with the best export packing practices. The success attained in improving export packing and packages and in reducing the large losses formerly incurred prompted interested individuals and groups to suggest that the Department undertake similar work in the domestic field.

Coincident with the movement for reduced distribution costs through simplified packing, there developed a widespread and systematic effort to simplify package design, container sizes, packaging, unit of pack, or quantity of contents in package, etc. The immediate object has been to eliminate the excessive or unnecessary variety, and concentrate production and packing requirements upon the sizes and types of containers and packages that will cover all needs without clogging the machinery of distribution and slowing down the rate of turnover.

In line with this movement a number of industries have sought the cooperation of the Division

[1]Publication approved by the Director of the National Bureau of Standards of the U. S. Department of Commerce.

of Simplified Practice, National Bureau of Standards, United States Department of Commerce, in working out and promulgating simplified practice recommendations, establishing a simplified list of recommended standard sizes, types, dimensions, etc., for containers and sizes of packages.

Shipping Containers

Among the Simplified Practice Recommendations which have been developed by the industries concerned, for shipping containers, are:

S. P. R. 20-28, Steel Barrels and Drums
S. P. R. 146-33, Corrugated and Solid Fiber Boxes for Canned Fruits and Vegetables
S. P. R. 164-36, Tinned Steel Ice Cream Cans

The variety in sizes and types of steel barrels and drums was reduced from 66 to 25 standard stock types and capacities. A simplified schedule of dimensions was adopted for air-dried and kiln-dried stock produced from gum, pine, and other soft woods, reducing the stock dimensions from 102 to 6 lengths, 165 to 6 widths, and 9 to 6 thicknesses. The Simplified Practice Recommendation for corrugated and solid fiber boxes for canned fruits and vegetables is based on Simplified Practice Recommendation R155-34, covering a simplified list of 27 standard stock sizes for packers' cans. Standard inside dimensions and packing arrangements have been worked out for boxes used in handling and transporting the 27 standard cans approved by the canning industry. This container simplification program resulted in a reduction from more than 150 combinations of sizes to 41. Representatives of the industry responsible for this recommendation believed that its adoption would eliminate considerable confusion among box manufacturers and canners regarding the proper sizes of boxes to use for each size of can. The promulgation of this recommendation has, no doubt, resulted in better and more economical packing, as well as more efficient use of space in warehouses, also reduced claims for damaged goods, etc.

Based on a factual survey made by The American Association of Creamery Butter Manufacturers, a simplified list of capacities and dimensions was adopted for stock wooden butter tubs. Another simplification program, adopted by the dairy products industry, is that for tinned steel ice cream cans. Variety surveys made in 1934 and 1935 by the Milk and Ice Cream Can Institute, indicated clearly that a proposed recommendation for cans previously submitted by the Simplified Practice Committee of the International Association of Ice Cream Manufacturers, was practical and consequently a reliable guide for the future. The suggested simplified practice recommendation for ice cream cans was submitted to all interests for consideration, and it was found to be generally acceptable. Information developed in connection with the survey revealed that at least 93 per cent of cans shipped during the period August 1, 1933, to August 1, 1934, were on the sizes subsequently adopted as standards. Adherence to this program will result in a reduction in variety of types and sizes of cans from 14 to 5.

Other simplification programs for shipping containers are in the process of development.

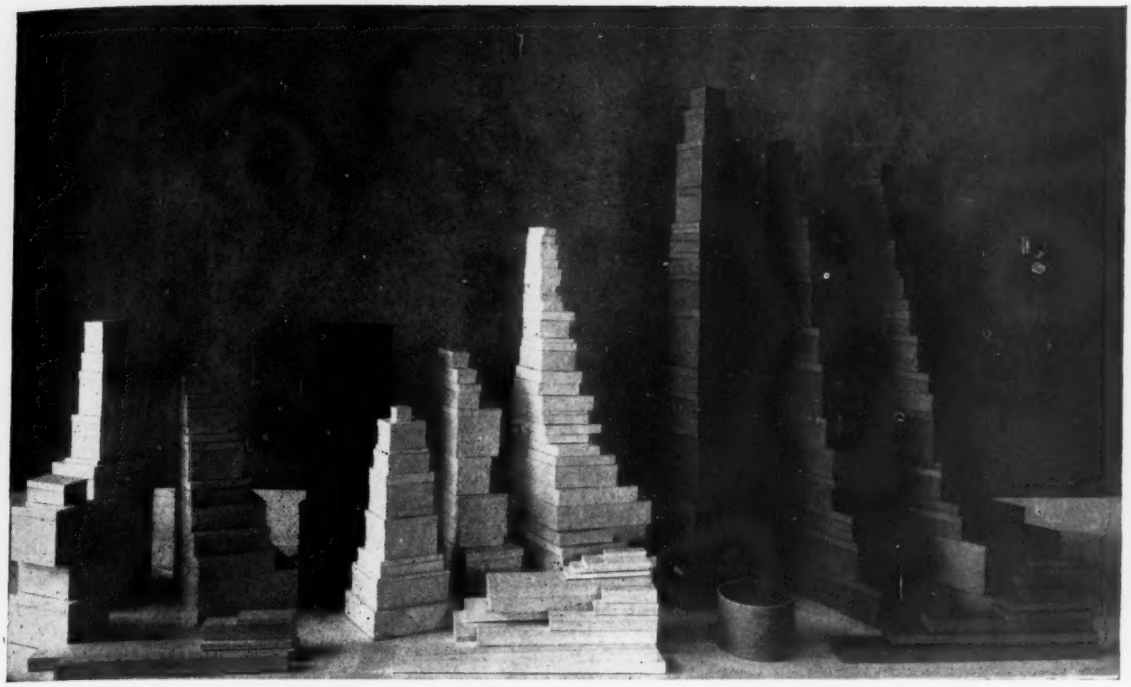
Packaging

As indicated above, the striving for lower costs of distribution has focused attention on the problem of proper packaging. Retail merchants have found many advantages in ordering goods so packed at factory that they can be handled in convenient units. This eliminates the inconvenience and extra expense of receiving material in bulk and then weighing, counting, and wrapping it when sale is made. The realization of this problem in distribution has led to the adoption of a number of simplified practice recommendations concerning packages. Some of these are:

S. P. R. R41, Insecticides and Fungicides (Package Sizes)
S. P. R. R60-30, Packaging of Carriage, Machine, and Lag Bolts
S. P. R. R117-30, Packaging of Dental Plaster, Investment and Artificial Stone
S. P. R. R161-35, Packaging of Automotive (Bus) Engine Parts

In 1924 the Bolt, Nut and Rivet Manufacturers' Association appointed a committee to study the most economical method of handling the millions of bolts, nuts, and rivets that were being produced at that time. This committee decided to confine its initial studies to carriage, machine, and lag bolts with the primary object of reducing the existing variety of containers and packages and securing economies in handling, packing, warehousing, and shipping. A simplified packing list was finally established, resulting in a material reduction in the number of sizes of containers used and the elimination of excessive handling, as well as a reduction in the amount of storage space required for finished stock, whether the product be in inventory of the manufacturer, jobber, retailer, or user. Further benefits resulted from the establishment of a standard quantity for each size bolt per package or case, and the development of a uniform packing practice.

Some interesting studies covering the packaging of materials have been conducted during the past few years by Purchases and Stores Committee No.



A Few of the 1,035 Different Sizes of Set-Up Boxes Found in 34 Stores Before the Simplified Practice Recommendation (S.P.R. R126-31) Was Made Effective

2 of the American Transit Engineering Association and other committees of the American Transit Association. Four simplified practice recommendations have been developed and promulgated covering the packaging of overhead electric railway material, electric railway motor and controller parts, automotive engine parts for buses, and airbrake parts for electric railway cars. These recommendations for packaging have been set up on the basis of number of units in standard package. The term "standard package" as used in these recommendations is not to be construed as a shipping package. It is defined as the quantity which is best suited to storing, unit piling, inventorying, distributing, and convenience to user. The manufacturers or shippers may place any number of standard packages in a carton for shipment.

Food Containers and Packages

In recent years the simplification of so-called "consumer containers" or "consumer food packages" has been engaging the attention of producers, packers, distributors, and consumers of food products. This movement has led to the curtailment of certain sizes of food containers and packages, resulting in reduced inventories and the concentration of sales effort upon standard sizes, thereby eliminating considerable confusion in the marketing and handling of food products. The producers and distributors of food products are finding that the simplification of dimensions and capacities of containers, and the adoption of standard sizes for packages based on quantity of contents, is practical and advantageous.

In cooperation with the manufacturers of containers, the producers, packers and distributors of food products, a number of simplified practice recommendations have been worked out, among them being:

S. P. R. R10, Milk and Cream Bottles and Bottle Caps
S. P. R. R91-32, Glass Containers for Preserves, Jellies and Apple Butter
S. P. R. R120-36, Ice Cream Brick Molds and Cartons
S. P. R. R131-35, Glass Containers for Mayonnaise and Kindred Products
S. P. R. R155-34, Cans for Fruits and Vegetables

The history of the development of Simplified Practice Recommendation R131-35, covering standard packages for mayonnaise and kindred products, will serve to illustrate the advantages and effectiveness of a food container or food package simplification program when adhered to by a large majority of the producers, packers and distributors.

For several years the executives of the Mayonnaise Manufacturers Association had been convinced that the simplification resulting from fewer capacities of jars would mean more satisfactory and orderly marketing and fairer competition in

Courtesy The Glass Packer

Six containers where two would serve. The three jars to the left each have a capacity of 6 ounces; the three to the right hold 12 ounces.

the industry. Accordingly, as a preliminary step, the association requested the Division of Simplified Practice to obtain from the manufacturers of mayonnaise and kindred products, an opinion on the desirability of reducing the variety of container or package sizes and specific suggestions as to the selection of sizes to be included in the simplified list. A survey made in 1928 by the foodstuffs division of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce revealed that at least 25 sizes of containers were being used in marketing mayonnaise, salad dressing, and sandwich spread. The survey developed the further information that only 6 of these sizes were required for the distribution of 85 per cent of the total production. It was evident that 75 per cent of the sizes could be eliminated without inconvenience to the trade. Another survey made in 1929 showed that the percentage packed in each of the 3 principal sizes increased during that year. Based on the results of these surveys, the container simplification committee of the Mayonnaise Manufacturers Association (now Mayonnaise and Salad Dressing Institute) drafted a tentative simplified list of package sizes and requested the Division of Simplified Practice to arrange for a general conference of all interests to consider the matter and formulate a definite simplified practice recommendation. Such a conference was held in June, 1931, and the tentative recommendation for standard containers on the basis of net contents was approved by those present. This simplified list of package sizes was subsequently approved by the industry and a representative standing committee was appointed to review the program from time to time. In 1934, the standing committee proposed a revision of the recommendation. The revised list of sizes was submitted to the industry and was subsequently approved by a substantial majority of the manufacturers based on volume of production. It is interesting to know that a recent survey of production, packaging, and distribution trends for the year 1935, with comparisons for preceding years, showed that only 1.4 per cent of total production reported by 96 firms for 1935 was packed in containers other than those sizes recommended in the simplified practice recommendation.

Fruit and Vegetable Cans

Perhaps the food container simplification program of greatest interest and widest appeal to the manufacturers, distributors, and consumers of food products is that worked out for fruit and vegetable cans. In April, 1928, the National Canners Association requested the cooperation of the Division of Simplified Practice in making a survey of the canning industry with a view to ascertaining the diversity existing in the sizes of packers' cans in use at that time. A report covering the results of the survey was submitted to the committee on simplification of containers of the National Canners Association. That committee recommended a reduction in the existing variety of more than 200 sizes of cans for fruits and vegetables to 27. The list of 27 standard stock sizes was accepted by the canning industry, subject to regular revision by a representative standing committee, appointed to take charge of the simplified practice recommendation. This committee has under consideration a revision of the present recommendation to include a few sizes that are in general demand and to drop certain sizes that are no longer in general use.

In addition to these two important food container simplification programs, and others mentioned above, several similar projects are under way for other food products. It will be noted that these food container or food package simplification programs have been established without interfering with distinctive features of the container or package, such as shape, closure, labels, etc.

Containers for Retail Dry Goods and Specialty Stores

In 1929, the National Retail Dry Goods Association's Committee on Simplification and Standardization of Wrapping and Packing Supplies requested the Division of Simplified Practice to assist in collecting data on the methods and materials used by department and specialty stores in the wrapping and packing of merchandise. A group of stores representing an aggregate sales volume of nearly $600,000,000 a year was select-

ed so as to give a wide range of local conditions and requirements. In addition to specialty dry goods stores, and large and small department stores, there was included one large organization doing an extensive mail-order business. The survey covered methods and supplies used for both ordinary and gift wrapping for 41 selected lines of merchandise. As a result of the committee's work in the simplification of sizes of wrapping and packing supplies, there were prepared tentative simplified lists of sizes for four types of containers for use in packing various commodities for local delivery or shipment. They were submitted for the consideration of a general conference of all interests, and afterwards approved by a large majority of the stores interested, as well as the manufacturers of boxes and bags. These four simplified practice recommendations for store containers are as follows:

S. P. R. R126-31, Set-up Boxes
S. P. R. R127-31, Folding Boxes
S. P. R. R128-31, Corrugated Boxes
S. P. R. R129-31, Notion and Millinery Bags

Miscellaneous

Other types of containers for which simplified practice recommendations have been developed are:

S. R. R. R42, Paper Grocers' Bags
S. P. R. R107-31, Glassine Bags

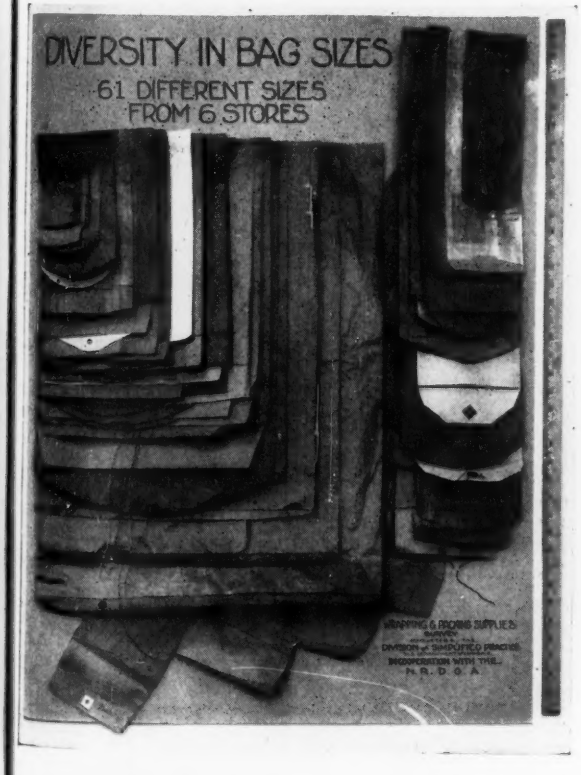
An interesting and important feature of the recommendation for paper grocers' bags is the adoption of an emblem to be stamped on all bags to indicate that the bags to which the recommendation applies conform with the standards agreed upon and recognized.

A number of simplified practice recommendations have also been promulgated for other items of interest to packers, shippers, and carriers. Several of them include standard packaging as a part of the simplification program. Some of the more important simplification programs falling within this group are:

S. P. R. R44, Box Board Thicknesses
S. P. R. R68-33, Metal and Fiber Flashlight Cases
S. P. R. R95-30, Skid Platforms
S. P. R. R114-30, No. 1 Kraft Paper Sealing Tape
S. P. R. R136-32, Flax and Hemp Twine

The interest in the package and container simplification movement is now far reaching and it is believed the cooperative procedure of the Division of Simplified Practice provides an excellent means whereby manufacturers and users of containers, as well as the shippers, packers, and consumers, may develop and promulgate voluntary simplified practice recommendations for all types of containers and packages.

A Survey Conducted by the Division of Simplified Practice Brought to Light This Confusion of Bag Sizes.



German Vehicles to Use Standard Size Batteries

Standard sizes of batteries will be used on all German electric vehicles from three tons upwards, according to an arrangement by the electric vehicle manufacturers in Germany reported in *Electric Vehicles and Batteries*, London.

Each battery container will hold 20 cells of a capacity suitable for the requirements.

On 3-ton vehicles there will be two such containers; i.e., a 40-cell battery. On 5-ton vehicles four containers of 20 cells each will be provided; i.e., an 80-cell battery.

Manchurian Track Gage Changed to Standard

The world's mileage of Russian broad gage track was materially reduced last month when the Japanese changed 600 miles of such track in northern Manchuria over to standard gage.—*Railway Age, September 5.*

Launch National Program For Correct Road Building

Standard Road Building Would Prevent Accidents, American Road Builders' Association Believes

The first national effort to eliminate those motor vehicle traffic hazards which may be due to improper and inadequate highway construction was taken recently when the American Road Builders' Association organized a Committee on Safe Highways. Dr. H. E. Tabler, chairman of the Maryland Roads Commission, was appointed chairman of the committee.

Inadequate streets and highways are an important cause of the increasing number of motor vehicle accidents, and highway safety may depend fundamentally on good highway engineering, the Association believes.

In announcing appointment of the committee, the American Road Builders' Association said:

"In view of the increasing number of motor vehicle accidents, many of which are due to inadequate streets and highways, the Association, representing in its membership all branches of the highway industry and profession, will mobilize the forces at its command in a nation-wide effort to promote sentiment throughout the country for the modernization of inadequate and hazardous highways to make them safe for present-day traffic.

"While the Association commends and will assist other agencies which have been concentrating their efforts on the driver, it feels that highway safety is fundamentally a matter of engineering. By straightening and widening our roads, by separating lanes of traffic, by flattening curves, by reducing grades, and by relocations where necessary, many faulty highway conditions can be eliminated. Proper lighting of heavy-traffic highways will reduce the night accident toll."

The Committee on Safe Highways will make its first report at the 1937 Convention and Exhibit of the American Road Builders' Association in New Orleans during the week of next January 11.

Mrs. Ansley to Direct Activities Of Home Economics Association

Mrs. Katharine M. Ansley has been named executive secretary of the American Home Economics Association, succeeding Alice L. Edwards, executive secretary of the A.H.E.A. for the past ten years. Miss Edwards continues as chairman of the Standards Committee of the A.H.E.A. and as alternate on the Standards Council of the American Standards Association for the American Home Economics Association.

Mrs. Ansley, who has been chairman of the department of home economics in institution administration of the A.H.E.A., has had experience in teaching and institutional management at Oregon State Agricultural College, Purdue University, and the University of Minnesota. Recently she was director of the emergency school lunch program organized under the F.E.R.A. in Washington, D. C.

Mrs. Kathryn Van Aken Burns, assistant professor on the staff of the University of Illinois, was elected president of the A.H.E.A. Mrs. Burns is a state home demonstration leader in Illinois, and has served as chairman of the extension service department of the American Home Economics Association and as a member of the executive committee.

The American Home Economics Association is a Member-Body of the American Standards Association, and is taking an active part in many of the standardization projects under ASA procedure.

A. H. E. A. Measures Women For Standard Working Heights

Standard heights for working surfaces in the home are being developed through projects in cooperation with the American Home Economics Association. One such project is now being worked out at Washington and Oregon State Colleges through actual measurement of adult women. These measurements are expected to show what are the most satisfactory heights for sinks, kitchen tables, and other working surfaces; what would be the best design for a kitchen chair suited for work and for the worker; and what might be satisfactory kitchen dimensions.

The following notice on the development of this project is published in the October issue of the *Journal of Home Economics*:

"The cooperative Washington-Oregon project on standardization of working heights has reached a point where data assembled in other areas would be of value. If any advanced or graduate student is interested in measuring housewives in her own state, she is urged to write to Miss Maud Wilson, Home Economics Building, Corvallis, Oregon, for further details. By October first a booklet of complete directions, with numerous illustrations and designs for needed equipment, will be available at a cost of $2.50. The needed equipment can be bought or constructed locally for about $20. Workers in other states may publish their own results as they see fit, but a copy of their original measurements should be furnished Miss Wilson. By this means it is hoped that over 3,000 measurements can be assembled. These should be of great value in the standardization of sinks, work surfaces, counters, and kitchen chairs."

Editorial Change in Standard Test For Water in Petroleum Products

An editorial change has been made in the Note to Section 9 of the Standard Method of Test for Water in Petroleum Products and Other Bituminous Materials (A.S.T.M. D 95-30; ASA Z11. 9-1930).

The note in its revised form will read:

"In special cases where the water content exceeds 10 per cent and it is not desirable to reduce the size of the sample to that which will yield somewhat less than 10 ml of water, a distilling tube receiver graduated from 0 to 25 ml may be used. This tube shall be graduated from 0 to 25 ml in 0.1-ml divisions [see Fig. 3 (*c*) of the Tentative Methods of Testing Emulsified Asphalts (A.S.T.M. Designation: D 244-36 T) of the American Society for Testing Materials]."

Answers of the Month

Here are some of the ways in which the ASA Library Reference service is helping American industry to fill its orders:

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2. **All standards on hot and cold pipe insulation were located for a glass manufacturer.**
3. **British Whitworth and metric thread standards were supplied to an American firm contracting for a foreign pipe fitting job.**
4. **Swedish standards for kitchens and cabinets were supplied to a public service corporation endeavoring to work out standard kitchens for its consumers.**

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